Release notes for ENDF/B Development d-001_H_003 evaluation

December 2, 2016

- **checkr** Warnings:

    1. A previous error halted parsing of the current section
       MAT= 131, MF= 1, MT=451 (1): Parsing stopped

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 1, MT=451
       SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      73 TO      80
    ```

- **checkr** Errors:

    1. A variable is outside the allowed ENDF range
       MAT= 131, MF= 1, MT=451 (0): Variable range

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 1, MT=451
       MOD =     2 OUT OF RANGE    0 -    1          RECORD NUMBER      73
    ```

    2. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT= 131, MF= 3, MT= 2 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 3, MT= 2
       SECTION  3/  2 NOT IN DIRECTORY            RECORD NUMBER      82
    ```

    3. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT= 131, MF= 3, MT= 50 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 3, MT= 50
       SECTION  3/ 50 NOT IN DIRECTORY            RECORD NUMBER      87
    ```

    4. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT= 131, MF= 3, MT= 51 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 3, MT= 51
       SECTION  3/ 51 NOT IN DIRECTORY            RECORD NUMBER     145
    ```

    5. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT= 131, MF= 6, MT= 2 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 6, MT= 2
       SECTION  6/  2 NOT IN DIRECTORY            RECORD NUMBER     162
    ```

    6. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT= 131, MF= 6, MT= 50 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT= 131, MF= 6, MT= 50
       SECTION  6/ 50 NOT IN DIRECTORY            RECORD NUMBER     594
    ```

    7. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT= 131, MF= 6, MT= 51 (0): Directory (b)

1

```
        ERROR(S) FOUND IN MAT= 131, MF= 6, MT= 51
            SECTION  6/ 51 NOT IN DIRECTORY                 RECORD NUMBER     923
```

- `fizcon` Errors:

  1. The cross section and an outgoing distribution don't span the same energy region.
     MAT= 131, MF= 3, MT= 2 (1): Diff limits (b)

     ```
             ERROR(S) FOUND IN MAT= 131, MF= 3, MT=  2
                 THE MAXIMUM INCIDENT ENERGY OF  1.00000E+07 (EV)
                     SHOULD BE GREATER THAN OR EQUAL TO  3.00000E+07
     ```

  2. The cross section and an outgoing distribution don't span the same energy region.
     MAT= 131, MF= 3, MT= 51 (1): Diff limits (b)

     ```
             ERROR(S) FOUND IN MAT= 131, MF= 3, MT= 51
                 THE MAXIMUM INCIDENT ENERGY OF  1.00000E+07 (EV)
                     SHOULD BE GREATER THAN OR EQUAL TO  3.00000E+07
     ```

- `fudge-4.0` Errors:

  1. Discrete levels are out of order
     particles / He4 (Error # 0): Levels out of order

     ```
     WARNING: Discrete level 1 is out of order
     ```

  2. There is a gap in the cross section
     reaction label 0: H2 + H3 / Cross section: (Error # 0): Gap in xsect.

     ```
     WARNING: Gap in cross section data from 1.e7 eV to 20. MeV
     ```

  3. Calculated and tabulated Q values disagree.
     reaction label 1: n + He4 (Error # 0): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: 17107791.89909935 eV vs 1.75893e7 eV!
     ```

  4. There is a gap in the cross section
     reaction label 2: n + (He4_e1 ->H1 + H3) / Cross section: (Error # 0): Gap in xsect.

     ```
     WARNING: Gap in cross section data from 1.e7 eV to 20. MeV
     ```

  5. Calculated and tabulated Q values disagree.
     reaction label 2: n + (He4_e1 ->H1 + H3) (Error # 1): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: 17107791.89909935 eV vs -2.2246 eV!
     ```